

Appl. No. 10/044,747
Filed: January 10, 2002
Page 2

Amendments to the Claims:

Please amend the claims as follows:

1. (Previously Amended) An oxidizer package for use in solid fuel propellant system, said oxidizer package comprising a solid oxidizer in the form of discrete pellets of a pre-determined geometric shape, wherein said pellets are arranged in an array with spaces amongst said pellets and said spaces are filled with a binder.
2. (Original) An oxidizer package of claim 1 wherein said pellets are pressed from an oxidizer composition.
3. (Original) An oxidizer package of claim 1 wherein said oxidizer composition comprises an oxidizer selected from the group consisting of hydroxylammonium nitrate, ammonium perchlorate, ammonium nitrate, hydroxylammonium perchlorate, nitronium perchlorate, hydrazinium nitroformate and ammonium dinitramide.
4. (Previously Amended) An oxidizer package of claim 3 wherein the composition additionally comprises at least one of modifiers and fuel additives.
5. (Cancelled)
6. (Cancelled)
7. (Previously Amended) A solid fuel propellant system comprising at least one oxidizer package of claim 1.

Appl. No. 10/044,747
Filed: January 10, 2002
Page 3

8. (Original) A solid fuel propellant system of claim 7, wherein said pellets are pressed from an oxidizer composition.
9. (Original) A solid fuel propellant system of claim 8, wherein said oxidizer composition comprises an oxidizer selected from the group consisting of hydroxylammonium nitrate, ammonium perchlorate, ammonium nitrate, hydroxylammonium perchlorate, nitronium perchlorate, hydrazinium nitroformate and ammonium dinitramide.
10. (Previously Amended) A solid fuel propellant system of claim 9, wherein the composition additionally comprises at least one of modifiers and fuel additives.
11. (Original) A solid fuel propellant system of claim 8, wherein said composition contains ultrafine aluminum.
12. (Previously Amended) A solid fuel propellant system of Claim 7, wherein the propellant system comprises at least two oxidizer packages, one oxidizer package being separated from another oxidizer package by an inhibitor layer.
13. (Previously Amended) A solid fuel propellant system of Claim 12, wherein at least two oxidizer packages are in the shape of a right section of a cylinder.
14. (Previously Amended) A solid fuel propellant system of Claim 13 wherein said right cylinder is divided into more than one section.
15. (Previously Amended) A solid fuel propellant system of Claim 14 wherein said sections are selected from semi-circles, tri-sections and quadrants.

Appl. No. 10/044,747
Filed: January 10, 2002
Page 4

16. (Previously Amended) A solid fuel propellant system of Claim 14 wherein said at least two oxidizer packages of the propellant have a circular cross-section with parallel planar opposing ends.

17. (Previously Amended) A solid fuel propellant system of Claim 7 wherein the pellets are in the form of at least one of spheres, capsules, rods and tubes.

18. (Previously Amended) A solid fuel propellant system of Claim 7 wherein the binder is selected from the group consisting of a thermoplastic polymer, a thermoset polymer, waxes or greases, an energetic polymer and a polymerized peroxide.

19. (Previously Amended) A solid fuel propellant system, of Claim 7 wherein the binder is a composite propellant or gas generator composition, or a double-base propellant.

20. (Original) A solid fuel propellant system of claim 9, wherein said oxidizer is hydrazinium nitroformate.

21. (Withdrawn) A solid fuel propellant system of claim 9, wherein said oxidizer is ammonium dinitramide.

22. (Original) A solid fuel propellant system of claim 7, wherein said propellant system is for a rocket.

23. (Previously Amended) A method of making a solid fuel propellant system of claim 7, comprising:

- i) introducing the binder amongst said pellets arranged in said array, and
- ii) allowing said binder to set to support said pellets in a binder matrix.

Appl. No. 10/044,747
Filed: January 10, 2002
Page 5

24. (Original) A method of claim 23 comprising the additional step of arranging said pellets in an array of predetermined arrangement.

25. (Original) A method of claim 23 wherein said binder is poured onto said array of pellets and is allowed to flow into spaces amongst said array of pellets.

26. (Original) A method of claim 23 wherein said binder is injected into spaces amongst said array of pellets.

27. (Original) A method of claim 23 wherein said pellets are mixed into said binder to provide thereby a random array of pellets in said binder.

28. (Original) A method of claim 27 wherein a sufficient amount of pellets are mixed with said binder to provide an array spacing between pellets of less than about 50 microns.

29. (Previously Added) An oxidizer package of claim 1 wherein the pellets are in the form of at least one of spheres, capsules, rods and tubes.

30. (Previously Added) An oxidizer package of claim 1 wherein the binder is selected from the group consisting of a thermoplastic polymer, a thermoset polymer, waxes or greases, an energetic polymer and a polymerized peroxide.

31. (Previously Added) An oxidizer package of claim 1 wherein the binder is a composite propellant or gas generator composition, or a double-base propellant.

32. (Previously Added) A solid fuel propellant system of claim 7, wherein the binder provides a support binder matrix, the binder being of a selected material to provide complementary burn rates for said pellets and said support binder matrix.

Appl. No. 10/044,747
Filed: January 10, 2002
Page 6

33. (Currently Amended) ~~An oxidizer package of claim 1~~ An oxidizer package for use in solid fuel propellant system, said oxidizer package comprising a solid oxidizer in the form of discrete pellets of a pre-determined geometric shape, wherein said pellets are arranged in an array with spaces amongst said pellets and said spaces are filled with a binder, and further comprising a holder for maintaining said pellets in said array for receipt of said binder.

34. (Previously Added) An oxidizer package of claim 33 wherein said holder for said array of pellets is a container.

35. (Previously Added) An oxidizer package of claim 34 wherein said holder for said array of pellets is a flexible open mesh having adhesive surfaces for sticking to said pellets, said mesh being wrapped about said pellets to hold said pellets in said array until a binder is introduced to spaces amongst said pellets through said open mesh.